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THE ASSISTANT COMMISSIONER FOR PATENTS  
 Washington, D. C. 20231

[ ] ATTN: BOX PATENT APPLICATION  
 [X] ATTN: BOX PCT

[X] THIS IS THE NATIONAL STAGE OF PCT/EP97/06267 FILED November 11, 1997

Transmitted herewith for filing is the [X] Utility [ ] Design patent application of:

Inventor/Application Identifier: **Holger LAUSCH**

For: **METHOD OF AND ARRANGEMENT FOR PROJECTION AND RECEPTION OF  
 VISUAL AND AUDIOVISUAL MESSAGES, AND ANALYSIS THEREOF TO  
 DETERMINE THE RADIUS OF ACTION AND CUSTOMER BEHAVIOR**

Enclosed are:

- [X] 4 sheets of drawings ([X] formal [ ] informal size A4 ).  
 [X] 16 pages of specification, including claims and abstract.  
 [X] 20 total pages  
 [X] Combined Declaration/Power of Attorney  
     [X] Newly executed  
     [ ] Copy from prior application  
     [ ] Inventors deleted; see attached statement  
 [ ] Incorporation By Reference. The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein  
 [ ] Sequence Listing  
     [ ] Computer Readable Copy  
     [ ] Paper copy  
 [ ] The undersigned hereby affirms that the content of the paper and computer readable copies of the Sequence Listing are the same.

CLAIMS FILED

<u>For</u>	<u>Number Filed</u>	<u>Number Extra</u>	<u>Rate</u>	<u>Basic Fee</u>	<u>\$840.00</u>
Total Claims	<u>27</u>	<u>7</u> (over 20)	x \$18.00	<u>\$126.00</u>	
Independent Claims	<u>2</u>	(over 3)	x \$78.00		
[X] Multiple Dependent Claim			\$260.00	<u>\$260.00</u>	
[X] Reduce by 50% for Small Entity			-	<u>\$613.00</u>	
[ ] Foreign Language Filing Fee			\$130.00		
TOTAL FILING FEE				<u>\$613.00</u>	
[X] Please charge Deposit Account No. 10-1250 in the amount of A duplicate copy of this sheet is attached.				<u>\$613.00</u>	
[X] Please charge to Deposit Account No. 10-1250 any further fees under 37 CFR 1.16; 37 CFR 1.17; 37 CFR 1.492.					

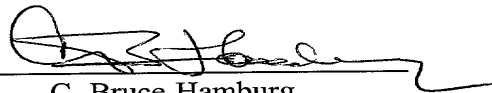
- ☒ Return Receipt Postcard  
☒ Preliminary Amendment  
☐ Assignment to \_\_\_\_\_  
    ☐ Assignment is of record in prior application Serial No. \_\_\_\_\_  
    ☐ Assignment Recordation Form Cover Sheet.  
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☒ Information Disclosure Statement and/or Information Disclosure Citation  
☐ English translation  
☒ Small Entity Declaration  
    ☒ filed herewith  
    ☐ filed in prior application and status is still proper and desired.  
☐ Applicant hereby claims the benefit of the filing date of the following provisional application(s) under the provisions of 35 USC 119.  
☒ Applicant hereby claims the benefit of the filing date of the following applications under the provisions of 35 USC 119 of which certified copies ☐ will follow ☐ are enclosed  
    ☒ have been filed in the International Bureau ☐ were filed in prior application No. \_\_\_\_\_.

**German Patent Appln. No. 196 47 341.1-53 filed November 15, 1996.**

- ☐ This is a ☐ continuation ☐ divisional ☐ continuation-in-part of prior application Serial No. \_\_\_\_\_  
☐ Cancel in this application original claims \_\_\_\_\_ of the prior application before calculating the filing fee.  
☐ Amend the specification by inserting before the first line the sentence:  
--This is a ☐ continuation, ☐ division, ☐ continuation-in-part, of application Serial No. \_\_\_\_\_, filed \_\_\_\_\_.

JORDAN AND HAMBURG LLP

By



C. Bruce Hamburg  
Reg. No. 22,389  
Attorney for Applicant

Applicant or Patentee: Dr. Holger Lausch Attorney's F-6201  
Serial or Patent No.: Not yet known Docket No.:  
Filed or Issued: Concurrently herewith

For: ~~METHOD AND ARRANGEMENT FOR PROJECTION AND RECEPTION OF~~  
~~VISUAL AND AUDIOVISUAL MESSAGES; AND ANALYSIS THEREOF TO~~  
~~DETERMINE THE RADIUS OF ACTION AND COSTUMER BEHAVIOR~~

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9 (f) and 1.27 (b)) — INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9 (c) for purposes of paying reduced fees under section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled METHOD AND ARRANGEMENT FOR PROJECTION AND RECEPTION OF VISUAL AND AUDIOVISUAL MESSAGES; AND ANALYSIS THEREOF TO DETERMINE THE RADIUS OF ACTION AND COSTUMER BEHAVIOR described in

☒ the specification filed herewith  
☐ application serial no. \_\_\_\_\_, filed \_\_\_\_\_  
☐ patent no. \_\_\_\_\_, issued \_\_\_\_\_

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9 (c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9 (d) or a nonprofit organization under 37 CFR 1.9 (e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☒ no such person, concern, or organization  
☐ persons, concerns or organizations listed below\*

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

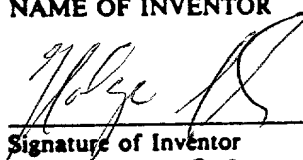
FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28 (b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Dr. Holger Lausch

NAME OF INVENTOR	NAME OF INVENTOR	NAME OF INVENTOR
		
Signature of Inventor	Signature of Inventor	Signature of Inventor
28.04.93		
Date	Date	Date

09/308017

510 Rec'd PCT/PTO 12 MAY 1999

F-6201

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Holger LAUSCH  
Serial No. : Not yet known (U.S. National Stage of PCT/EP97/06267  
filed November 11, 1997)  
Filed : Concurrently herewith  
For : METHOD OF AND ARRANGEMENT FOR PROJECTION AND  
RECEPTION OF VISUAL AND AUDIOVISUAL MESSAGES,  
AND ANALYSIS THEREOF TO DETERMINE THE RADIUS  
OF ACTION AND CUSTOMER BEHAVIOR

Assistant Commissioner for Patents  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Preliminary to examination, please amend this application as follows:

IN THE CLAIMS:

1. (Amended) Method for [the projection and the reception of] detecting  
the customer behavior due to projected visual and audiovisual messages and [the  
analysis of the same] for detecting the range of action [and the purchaser behavior]  
of the projected messages, characterized in that in a [consumption] detection range  
the number of the potential [customer] customers is detected in direct sequence, and  
in that [depending on the number] the messages are presented to the potential  
[customer messages are presented] customers visually or audiovisually, and in that the  
[consumption] behavior of the potential customers as recipients and consumers is

detected, and in that the number of the actual buyers and of the bought products is detected, and in that the detected and register numbers of the potential customers, the recipients, of the actual buyers and of the bought products are recorded and correlated.

2. (Amended) Method as claimed in claim 1, characterized in that the detected numbers [are] of at least two [consumption] detection ranges are centrally registered and evaluated.

4. (Amended) Arrangement for [the projection and the reception of] detecting the customer behavior due to projected visual and audiovisual messages and [the analysis of the same] for detecting the range of action [and the purchaser behavior] of the projected messages, characterized [by] in that sensors are provided being associated to at least one range [with] for detecting the movements of the recipients in said range, wherein at least a first sensor is provided at an entry of [the] said range for [the] detecting first counting signals[,], and at least a second sensor at an exit of said range for detecting second counting signals[,], and, further, in that a display is provided for presenting messages in said range, a cash [register] box for [the] detecting the bought products and a computer for [the] recording and [evaluation of] evaluating the [counting] signals [by difference formation and] of movements and the counting signals for analyzing the projection and the reception data as well as for controlling said display.

5. (Amended) Arrangement according to claim 4, characterized by two ranges connected [to] with one another via a passage, at which at least a third sensor is provided, wherein the display is arranged in said first range and the products in said second range.

Claim 10, line 2, delete "an".

Claim 12, line 1, delete "or 11".

Claim 13, line 1, change "claims 10, 11, or 12" to --claim 10--.

Add the following claims:

-- 15. Arrangement according to claim 11, characterized in that the display is arranged inclinedly.

16. Arrangement according to claim 11, characterized in that a plurality of displays is arranged in suitable manner.

17. Arrangement according to claim 12, characterized in that a plurality of displays is arranged in suitable manner. --

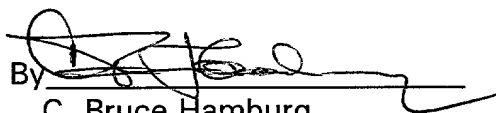
#### REMARKS

This conforms the claims in substance to an Article 34 Amendment filed in the International (PCT) Application. However, claim 15, parallel to claim 12, and claims 16 and 17, parallel to claim 13, are provided in lieu of having claim 12 depend

alternatively from claims 10 and 11 and claim 13 depend alternatively from claims 10, 11 and 12 which would be objectionable in U.S. practice on the basis of a multiple dependent claim depending from another multiple dependent claim.

Respectfully submitted,

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METHOD OF AND ARRANGEMENT FOR PROJECTION AND  
RECEPTION OF VISUAL AND AUDIOVISUAL MESSAGES, AND  
ANALYSIS THEREOF TO DETERMINE THE RADIUS OF  
ACTION AND CUSTOMER BEHAVIOR

5

**BACKGROUND OF THE INVENTION**

The invention relates to a method of and arrangement for projection and reception of visual and audiovisual messages and analysis thereof to determine the customer behavior.

- 10 The audiovisual advertising is known via TV sets set up in suitable places in sales rooms. Furthermore, it is known to use TV combinations and TV-panels, respectively, (US 4 866 530, DE 37 20 468 A1) for advertising purposes. Furthermore, LCD- and laser projectors are employed for the enlarged projection of messages. However, such
- 15 arrangements and methods are technically very expensive and, concerning a mounting which is in conformity to the architecture, not suited or at least non-flexible due to their comparatively large dimensions, their high weight and the high thermic development involved.
- 20 Furthermore, a system has already been proposed for recording sales figures and/or sale times (DE 195 37 895 A1), wherein by means of a central questioning unit at different places of a sales area, the number of sold newspapers is registered. Furthermore, it is known from DE 36 09 933 A1 to call up product illustrations from a central storage for
- 25 presentation purposes. Finally, according to EP 0 697 670 A1 customers in a retail-shop may obtain informations about the location



of a searched for product by pressing a press button at their shopping cart. However, no statement is possible in this way concerning the customer behavior or the shopping behavior in dependence on advertising.

5

## **SUMMARY OF THE INVENTION**

Therefore, it is an object of the present invention to provide a universally usable, flexibly mountable and linkable arrangement of the projection of visual and audiovisual, respectively, messages and signals  
10 which can be programmed, controlled, and verified, as well as for analyzing customers behavior in consumption sections, and a method suitable thereto.

## **DETAILED DESCRIPTION OF THE INVENTION**

15 According to the invention the object is realized by the features of the first patent claim. It is important that the inventional method permits to exactly determine the purchasing behavior of a group of customers in any desired territory. In this case, the potential buyers (recipients) can be confronted with new products or goods which are part of a broad  
20 sales assortment. The customers of products or goods can also be the recipients of services.

An arrangement for carrying out said method shows the following features:

- at least one range with at least one first sensor at an input of said  
25 range for deriving first counting signals and at least a second sensor at an output of the range for deriving second counting signals,

- at least one display in the range of offering messages,
- a cash register for counting the bought products, and
- a computer for recording and evaluating the counting signals derived from the sensors and for controlling the display.

- 5 The evaluation of the sensor signals has the task to determine the potential buyers as recipients and, hence, the communication range. To this end the difference is formed from the second and the first counting signals. When this difference is zero, the display does not need to be ON. The computer also is designed as an image storage device for the
- 10 messages to the display which is adapted to be architectonically and ergonomically favorably arranged, said messages being stored on video CD, for example. The computer can receive the control program for the actual and locally differentiated projection mode from a central station. In order that the purchaser behavior can be determined over an entire
- 15 area or country, the computers of the individual arrangements, each of which being associated to, for example, a shopping-center, are cross-linked with the central station which permits a central evaluation of the data obtained in the individual supermarkets and additionally allows the determination of a mean value of the purchaser behavior.
- 20 Particularly, when worldwide linked this is preferably achieved via satellite. When informations are requested about the usual purchase behavior in a territory, then only the data of this territory are taken into consideration for evaluation. According to an improvement of the arrangement there are provided two ranges which are connected to one
- 25 another via a passage, wherein at least a third sensor is located at said passage, the display being in the first range and the products in the

second range. In this case, the second sensor located at the exit of the second range can detect both, the number of customers and of products and can be integral part of a cash register, preferably of an electronic cash register.

- 5 The display is preferably designed as a fiber-optical display which consists of a field display, upon which optical images are generated from electronic ones on framed displays or monitors and the same are joined without margins in a projection plane via light conducting fibers or bundles thereof which are arranged in lines and columns. The video
- 10 diagonal of the fiber optical display can amount to 1 to 2 m and more. There are different possibilities both, for embodiment of the fiber optical displays and for the arrangement of the same. Anyhow, it is advantageous to set up the fiber-optical display by modules, the light entry faces of which are of standard size with respect to the
- 15 conventional screen sizes for TV sets and monitors. The displays can be arranged in upright, suspended or inclined position, individually or in combination with one other. A favorable arrangement of displays comprises 2, 3, 4, 6 or 8 displays arranged regularly, preferably inclined. Advantageous angles of inclination relative to a vertical line
- 20 amount to  $30^\circ$ ,  $45^\circ$  or  $60^\circ$ , depending on the respective conditions.

The present invention permits a programmable, sensor-controlled and recordable projection of visual or audiovisual messages or signals on universal and large-area displays which are adaptable to the architecture. The recorded data of the projection and of the reception

25 (point of time, frequency, duration and range) are coupled to the consumption data registered via scanners in the electronic cash

registers. The projections data, the reception data, and the consumption data from the individual inventional arrangements as well as the programming and control of the same are adapted to be variably and flexibly cross-linked locally, regionally, and interregionally, for example, according to the so-called Nielsen-areas, with respect to contents, product groups, target groups, and timing.

### DETAILED DESCRIPTION OF THE INVENTION

The invention will be explained hereinafter in more detail by means of the schematic drawing. There is shown in:

- Fig. 1 a first inventional arrangement in block diagram,
- Fig. 2 a second inventional arrangement in block diagram,
- Fig. 3 a general setup of an inventional fiber-optical display,
- Fig. 4 a perspective view of an embodiment of a fiber-optical display, Fig. 5 a perspective view of two fiber-optical displays in inclined arrangement,
- Fig. 6 a plan view of four fiber-optical displays in inclined arrangement, Fig. 7 a plan view of eight fiber-optical displays in inclined and regular arrangement,
- Fig. 8 a plan view of a frame-like arrangement of continuous display areas of a range,
- Fig. 9 a plan view of a frame-like arrangement of partial display areas of a range,
- Fig. 10 a plan view of an exclusively parallel arrangement of display areas, and
- Fig. 11 a plan view of a diagonal arrangement of display areas.

Fig. 1 comprises a first arrangement 1 of two ranges 2 and 3, which are limited by sensors 4, 5, 6. The latter can be embodied as IR, HF, CCD or radar sensors. In range 2 there is arranged an architectural and ergonomically adapted large-area display 7 for the visual and audiovisual representation of messages, signals, advertising information or other information. The display 7 is arranged ergonomically favorably for customers, preferably at a raised and inclined position. In range 3, inter alia, the products or goods for which field 2 advertises on display 7 are available and for sale, respectively. Both, the sensors 4, 5, 6 and the display 7 are connected to a computer 8 which receives the signals delivered by the sensors and evaluates the same for purchasing analysis. The computer includes an image storage for the display and also controls the display 7. The computer 8 which preferably is embodied as a PC is connected, in turn, to a central detection and evaluation unit 9 which is cross-linked to further computers of other and identical arrangements 10, 11, 12.

Customers, that is, potential purchasers 14 pass through an entry 13 into the range 2; their number is detected by the sensor 4 which feeds respective signals into the computer 8. In the range 2 the potential purchasers 14 are made known to specific products and goods available in range 3 via the display 7, thus being turned into recipients. Then, each potential customer 14 can leave range 2 by the entry 13 or can pass into range 3 via a passage 15, where he, inter alia, can get or take those products (that product) 142 which were advertised in range 2. When leaving by the passage 15 the potential buyer 14 is again counted, namely by the sensor 5 and a respective signal is delivered to

the computer 8 which from the counting difference of the sensors 4 and 5 derives a respective signal output to switch ON and to switch OFF, respectively, the display 7. Sensors 4, 5, 6 can be light barriers, motion detectors, induction loop detectors or the like. The potential customer  
5 can become an actual buyer 141 when he leaves range 3 by an exit 16 and his/her recorded purchasing behavior is detected. To this end the exit is provided with a cash register, preferably an electronic cash register that is coupled to sensor 6 which signalizes to the computer 8 how many recipients 14 leave range 3 and how many specific products,  
10 for which advertising messages had been sent, were bought. The recorded projection and customer data are stored in computer 8 for a correlation analysis. In this way, the advertising can be related to frequency, radius of action, products and time. The computer 8 feeds the data into the central detection and evaluation unit 9 which compares  
15 the advertising effect and the buying behavior in different territories, detects an average advertising effect and buying behavior in larger territories and provides the basis for measures for further advertising activities and the supply of goods and the distribution of goods, respectively.

20 In Fig. 2, a second arrangement 17 is schematically and in plan view represents a petrol station 18. A filling-up zone 19 is limited by an inlet sensor 20 and an outlet sensor 21. In the filling-up zone 19, a display is arranged and embodied in a manner which is still to be described in, for example, connection with Fig. 3 to 10. Furthermore, the arrangement  
25 17 includes a car shop 23 in which goods are sold, which are audiovisually advertised for on a display 22, and which further includes

a cash register 24 and a computer 25. The computer 25 is connected via signal lines 26 to the inlet sensor (or sensors) 20 and the outlet sensor (or sensors) 21, the display 22, as well as to the cash register 24, via which the computer 25 receives the signals from the sensors 20, 21 and from the cash register 24 and controls the display 22. Similar to Fig. 1, the computer 25 can be connected to a central detection and evaluation. As to the rest the method is the same as described in connection with Fig. 1 under consideration of the specific conditions for the customer in a petrol station shop.

In Fig. 3 a section of a large-area fiber-optical display 27 is shown. The latter consists of monitors 28 whereupon optical partial images are electronically generated, each of which having a peripheric margin 29 which is technologically conditioned. In adjacent frontal opposition to the screens of the monitors 28 smooth end faces 30 of light conducting fibers 33 adhesively connected to one another via their end portions 31, 32 are provided, the remotely arranged, also smooth end faces 34 of said light conducting fibers 33 constitute an observation plane or projection plane 35 which is provided with a phosphorescent layer 36. The light conducting fibers 33 can be rigid or flexible in entity; they can be made of glass or epoxy, can have a conical or cylindrical shape and can be embodied as monomode or multimode fibers. According to the technical requirements, however, within the frame of feasibility, they can exhibit neckings 37 or can be embodied without the latter. The light conducting fibers (or bundles of fibers) 33 are preferably combined to standardized blocks 38, which are individually exchangeable, the smooth end faces 30 of which exhibit the same

geometry as the screens of the monitors 28. Within each of the blocks 38 the fibers (and bundles of fibers, respectively,) 33 are arranged in lines and columns. The light conducting fibers 33 produce an image which is identical to the partial images in the observation plane or projection plane 35, however, without margins 29; they are joined together without margin. For reasons of representation, there are considerably less light conducting fibers 33 shown in block 38 in Fig. 3 than existing in reality. Moreover, the fiber-optical display 27 consists of more blocks 38 than represented. Instead of being arranged in parallel the monitors 28 can be arranged diagonally to the observation plane (projection plane) 35.

In Fig. 4 a technical embodiment of a fiber-optical display 27 is represented. The blocks 38 of the light conducting fibers 33 are indicated on the upper area of a housing 55. The smooth ends 34 of the light conducting fibers 33 form the projection area 35 which is provided with a luminous layer 36. The projection format of the fiber-optical display 27 is 16:12, its maximum thickness is 20cm and its minimal diagonal 1m.

In Fig. 5 two fiber-optical displays 39, 40 are mounted on a mounting frame 41 mutually inclined at an angle of  $60^\circ$ . The angle of inclination depends on the local conditions and requirements; it can be, for example, also  $90^\circ$  or  $120^\circ$ .

In Fig. 6, four identical displays 42 are mounted to a mounting frame 43 under an angle of  $30^\circ$  to  $45^\circ$  relative to a fictitious mounting plane which is in parallel to the drawing plane so that the presentation



simultaneously appearing on the displays 42 substantially is detectable from all sides.

In Fig. 7 eight identical displays 44 are arranged under an angle of  $30^\circ$  relative to the mounting plane in parallel to the drawing plane on a mounting frame 45 so that a further improvement of the all-round  
5 visibility of the displays 44 is achieved.

Fig. 8 shows by example of a petrol station 46 with petrol pumps 47 the arrangement of closed display areas 48 which are inclined by about  $45^\circ$  relative to the vertical line along a horizontal roof edge 49. The roof edge, however, is omitted for reasons of representation. It is  
10 feasible to simultaneously realize different presentations on the display areas 48.

Fig. 9 distinguishes from Fig. 8 by the use of partial display areas 50 which, arranged under the roof of the service station, are visible from almost all sides by a potential customer. It is self-understood that on  
15 said displays there have to be represented not only products and also not only goods which are on sale at the petrol station.

Fig. 10 renders visible display areas 51 which, under a not represented roof of the petrol station, are arranged suitably inclined for each lane in  
20 each driving direction for being viewed from the front.

In Fig. 11, inclined display areas 52 are mounted, diagonally relative to the roof edges 54, in accordance with the arrangement of petrol pumps 53 and lanes. The central mutually inclined display areas can be mounted similar to the same described in Fig. 5.

The invention is not restricted to the embodiments disclosed. Thus, for  
25 example, the display areas need not be arranged, as shown in Fig. 8 and

9, along each roof edge. It is also feasible to centrally arrange a mounting frame provided with a plurality of displays in a range or room. When IR sensors, CCD-sensors, and radar sensors are employed the detection of counting and motion pulses logically is performed at  
5 the entry and at the exit of a recipient and at the stay of the same in the detection range. Neither is the application restricted to retail shops and petrol stations. In the same manner, it is feasible to employ arrangements of displays at bus stops and railway stops, on railway stations, in waiting zones, in terminals, in pedestrian precincts etc., and  
10 in adequate manner for optional information purposes. Finally, the individual features of the invention can be combined with one another in different ways. This concerns both the ranges, the sensors and also the displays.

## LIST OF REFERENCE NUMERALS

1, 10, 11, 12, 17	- arrangements
2, 3	- ranges
4, 5, 6	- sensors
7, 22, 27, 39, 40, 42, 44	- displays
8	- computers
9	- central detection and evaluation unit
13	- entry
14	- potential customer
15	- passage
16	- exit
18	- patrol station
19	- filling-up zone
20	- inlet sensor(s)
21	- exit sensor(s)
23	- car shop
24	- (electronic) cash register
25	- computer
26	- signal lines
28	- monitors
29	- margin
30, 34	- end faces
31, 32	- end portions
33	- light conducting fibers/bundle of light conducting fibers
35	- observation or projection planes
36	- luminous layer
37	- necking
38	- block
41, 43, 45	- mounting frame
46	- petrol station
47, 53	- petrol pumps
48, 50, 51, 52	- display areas
49, 54	- roof edge
55	- housing
141	- actual buyer
142	- product

## CLAIMS

- 5 1. Method for the projection and the reception of visual and audiovisual  
messages and the analysis of the same for detecting the range of  
action and the purchaser behavior, characterized in that in a  
consumption range the number the potential customer is detected in  
direct sequence, and in that depending on the number the potential  
10 customer messages are presented visually or audiovisually, and in  
that the consumption behavior of the potential customers is detected,  
and in that the number of the actual buyers and of the bought  
products is detected, and in that the detected numbers of the  
potential customers, of the actual buyers and of the bought products  
15 are recorded and correlated.
- 20 2. Method as claimed in claim 1, characterized in that the detected  
numbers are of at least two consumption ranges are centrally  
registered and evaluated.
3. Method as claimed in claim 2, characterized in that the mode of  
presenting the messages is centrally controlled.

4. Arrangement for the projection and the reception of visual and audiovisual messages and the analysis of the same for detecting the range of action and the purchaser behavior, characterized by at least one range with at least a first sensor at an entry of the range for the detecting first counting signals, at least a second sensor at an exit of said range for detecting second counting signals, a display for presenting messages in said range, a cash register for the detecting the bought products and a computer for the recording and evaluation of the counting signals by difference formation and for controlling said display.
5. Arrangement according to claim 4, characterized by two ranges connected to one another via a passage, at which at least a third sensor is provided, wherein the display is arranged in said first range and the products in said second range.
6. Arrangement according to claim 4 or 5, characterized in that said second sensor at the exit is coupled to an electronic cash register.
7. Arrangement according to claim 6, characterized in that said computer includes an image storage for the display.
8. Arrangement according to claim 7, characterized in that said computer is in combination with computers of further arrangements to a central detection and evaluation unit.

9. Arrangement according to claim 4, characterized in that a fiber-optical display is employed.
10. Arrangement according to claim 4 or 9, characterized in that the  
5 display is arranged in an upright position.
11. Arrangement according to claim 4 or 9, characterized in that the display is arranged suspended in suitable manner.
- 10 12. Arrangement according to claim 10 or 11, characterized in that the display is arranged inclinedly.
13. Arrangement according to claims 10, 11, or 12, characterized in that a plurality of displays is arranged in suitable manner.
- 15 14. Arrangement according to claim 4, characterized in that the same is cross-linked with at least a further same arrangement via a central station.

## ABSTRACT

In order to achieve a universal, networkable and verifiable analysis of the projection and reception of visual and audio-visual messages to  
5 determine the radius of action and the customer behavior, the invention includes at least one projection area with an input and an output sensor controlling the projection via architecturally and ergonomically arranged displays and determining of the radius of action. Also included is a consumption area with an electronic cash register  
10 recording customer behavior. Both areas can coincide. Data provided from both areas is correlated in a computer. Several similar devices are connected to each other via a central station.

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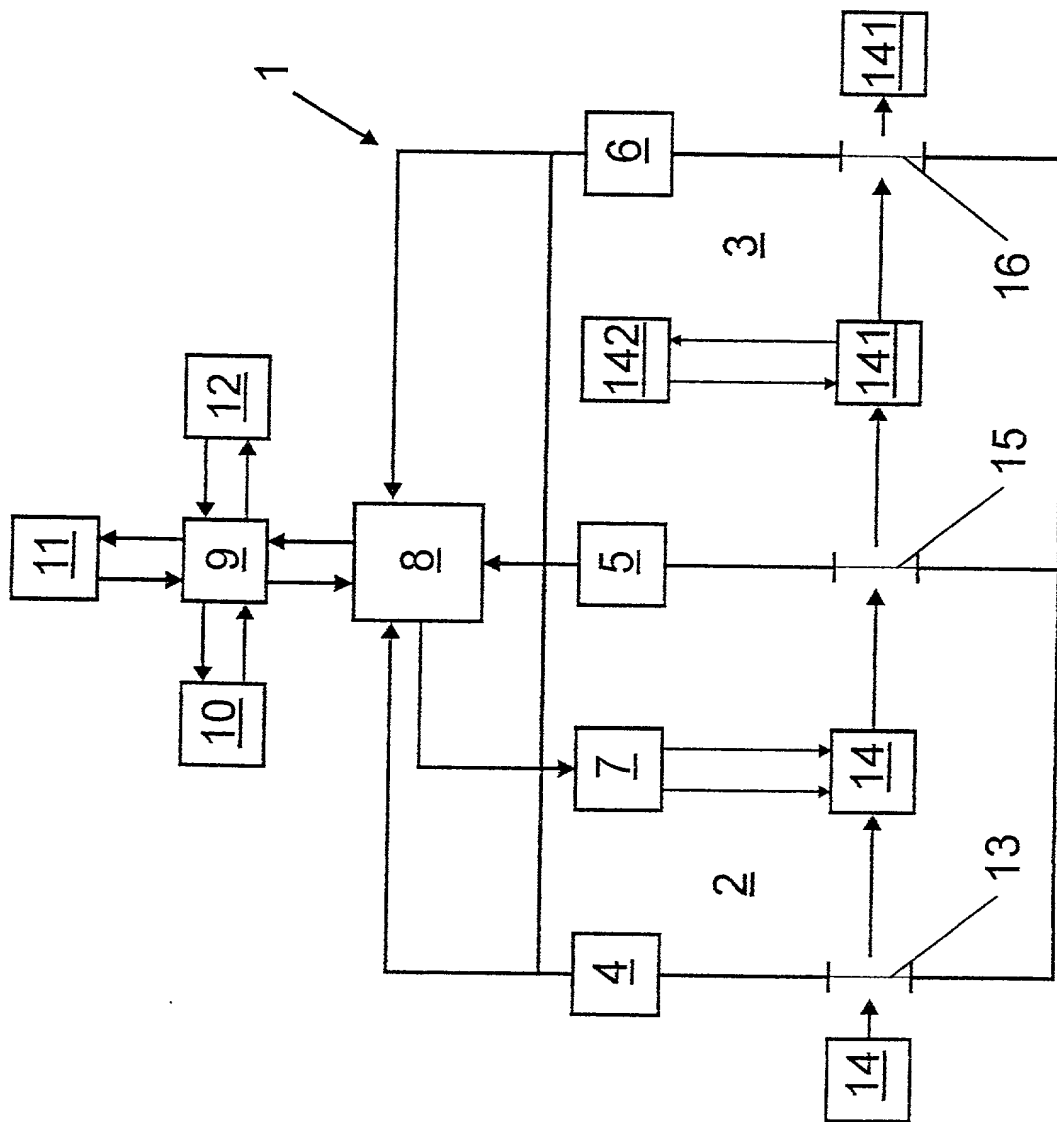


Fig. 1



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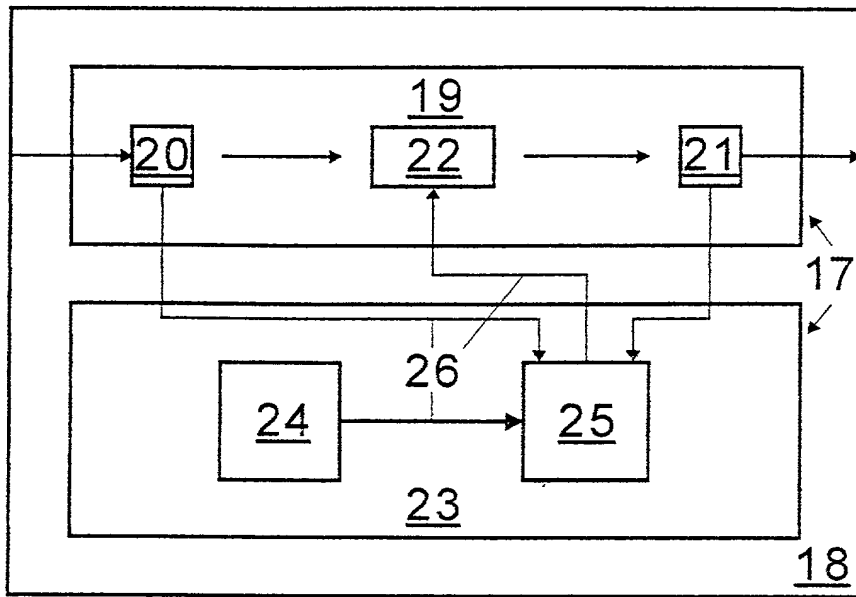


Fig. 2

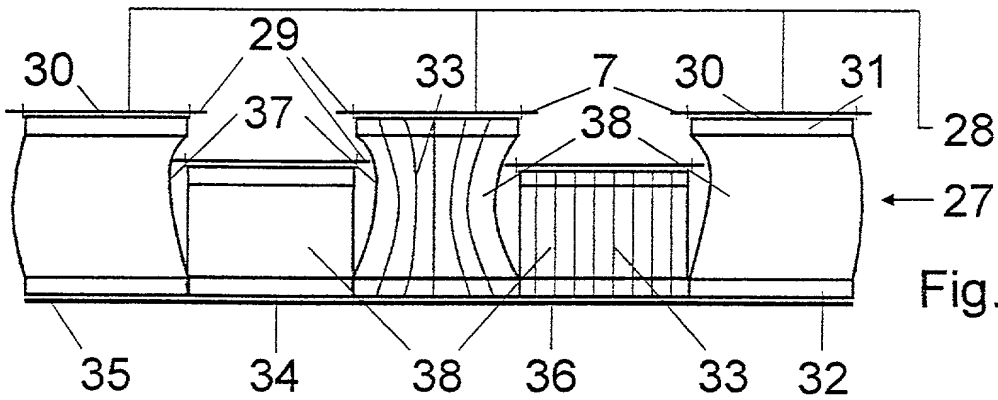


Fig. 3

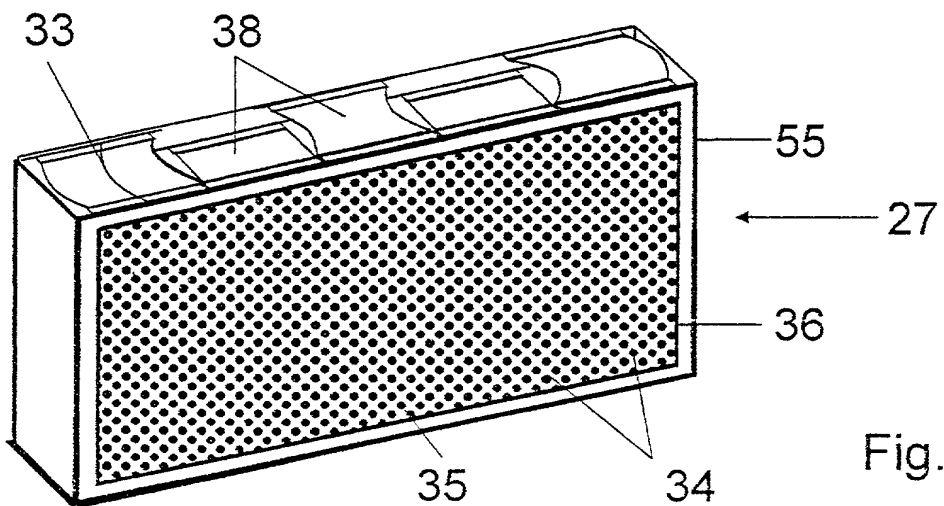


Fig. 4

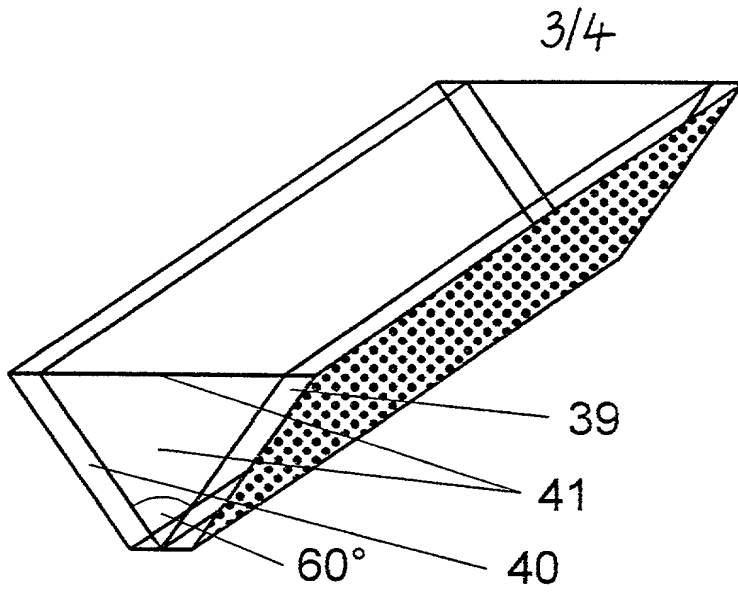


Fig. 5

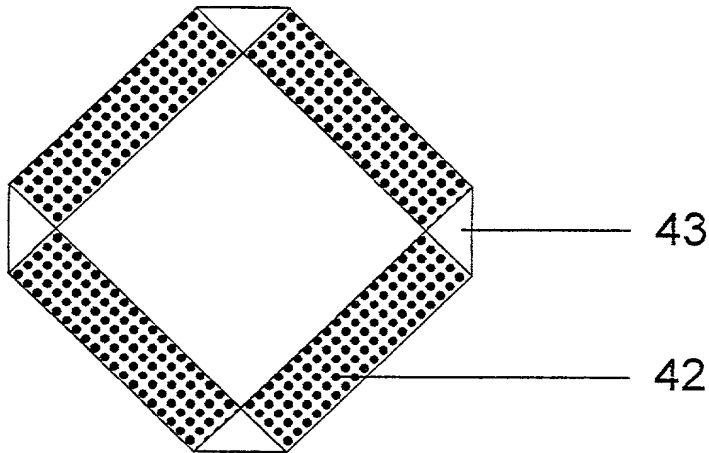


Fig. 6

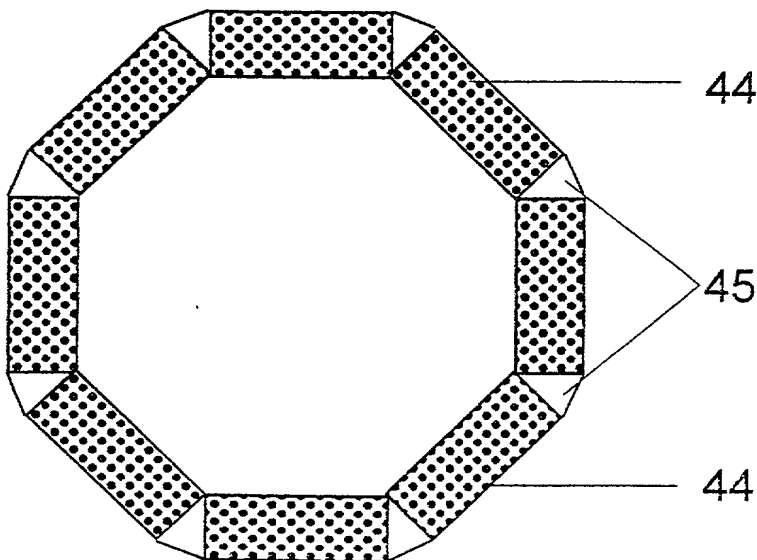
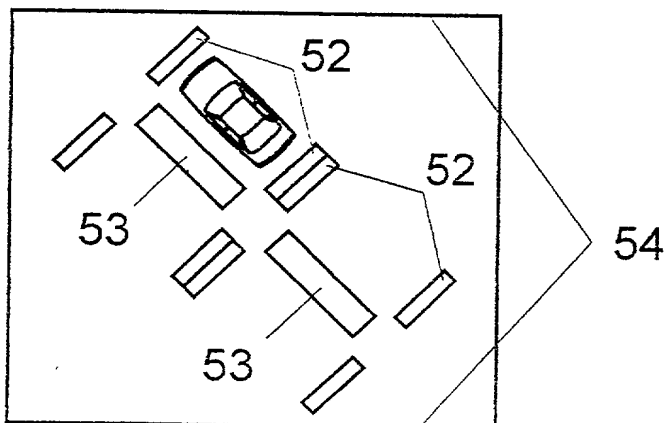
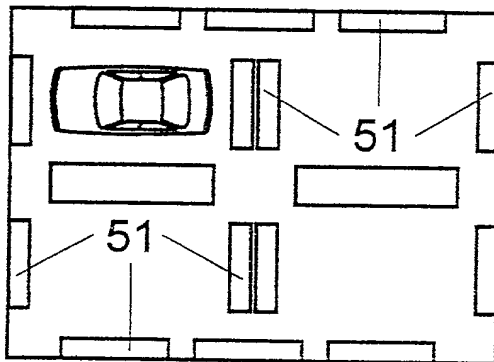
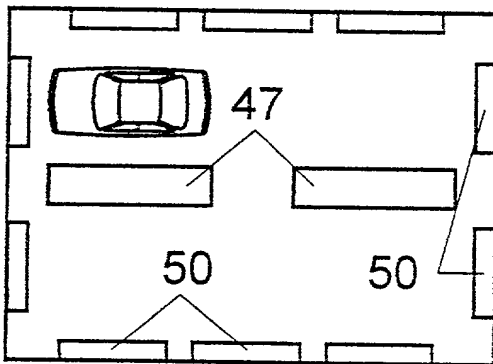
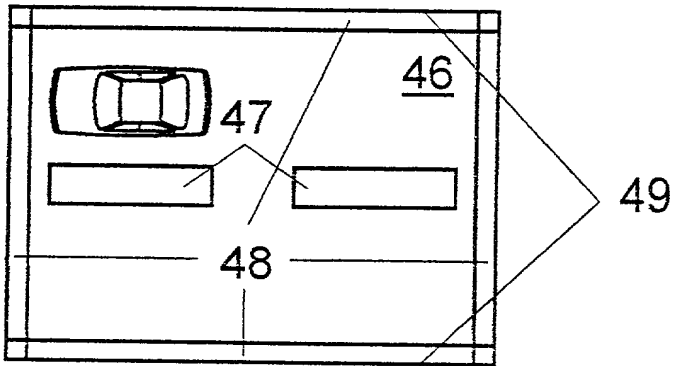


Fig. 7

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**COMBINED DECLARATION FOR PATENT APPLICATION AND  
POWER OF ATTORNEY**

(Includes Reference to PCT International Applications)

Attorney's Docket Number

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD AND ARRANGEMENT FOR PROJECTION AND RECEPTION OF VISUAL AND  
AUDIOVISUAL MESSAGES; AND ANALYSIS THEREOF TO DETERMINE THE RADIUS OF  
ACTION AND COSTUMER BEHAVIOR

the specification of which (check only one item below):

☐ is attached hereto.

☐ was filed as United States application

Serial No. \_\_\_\_\_

on \_\_\_\_\_,

and was amended

on \_\_\_\_\_ (if applicable).

☒ was filed as PCT international application

Number PCT/EP97/06267,

on November 11, 1997

and was amended under PCT Article 19

on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:			
Country (if PCT indicate "PCT")	Application Number	Date of Filing (day, month, year)	Priority Claimed Under 35 USC 119
DE	196 47 341.1-53	15 11 1996	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

**COMBINED DECLARATION FOR PATENT APPLICATION AND  
POWER OF ATTORNEY (Continued)**

(Includes Reference to PCT International Applications)

Attorney's Docket Number

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120					
U.S. APPLICATIONS			STATUS (Check One)		
U.S. Application Number	U. S. Filing Date		Patented	Pending	Abandoned
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT Application No.	PCT Filing Date	U.S. Serial Numbers Assigned (if any)			

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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Residence		Citizenship
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